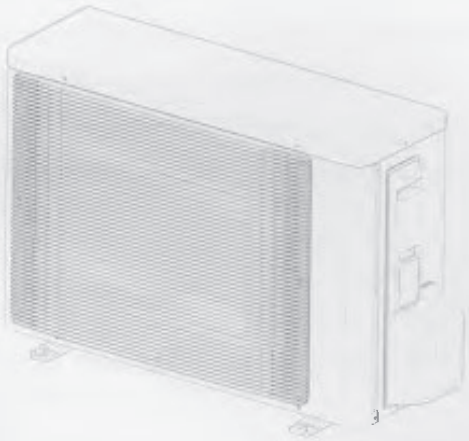
MARIANI CLIMA

SPLIT TYPE AIR CONDITIONER INSTALLATION MANUAL



For 7,000 - 12,000 Btu

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SAFETY PRECAUTION

- Please read the "Safety Precaution" carefully before installing the unit.
- Pay special attention to signs of "WARNING" and "CAUTION". The "Warning" section contains matters which, if not observed strictly, may cause death or serious injury. The "Caution" section contains matters which may result in serious consequences if not observed properly. Please follow all instructions strictly to help ensure your safety.

WARNING

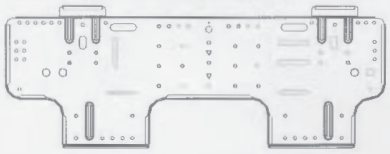
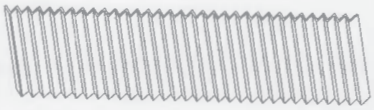
- **We recommend that you ask a qualified technician to install your air conditioner in accordance with this Installation Manual.**
- **Read this manual carefully before using your air conditioner.**
- **All wiring must conform to local and national electrical codes.**
- **To avoid possible electrical shock, you must ground your air conditioner.**
- **This air conditioner requires a separate power supply on a separate fused circuit.**
- **If the supply cord is damaged, it must be replaced by a qualified technician.**
- **Do not disconnect or connect the power plug during operation.**
- **Do not insert your finger, a stick or any object into the air inlet and air outlet.**

CAUTION

- **Keep this manual for future reference as it contains important installation and safety instructions.**
- **Do not install the outdoor condensing unit near flammable gas. The condensing unit may catch fire if flammable gas leaks.**
- **Do not connect the power plug with wet hands.**
- **Do not expose your skin directly to the airflow for a long time.**

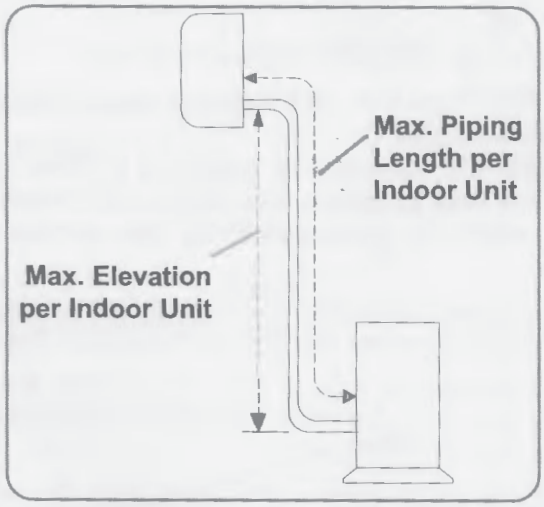
PART LISTS

A number of small parts have been packed with the indoor/outdoor units. Please check the contents of the box with the list below.

Description		Quantity
Wall Bracket		*1*
Remote Control		*1*
AAA batteries		*2*
Screws for Wall Mounting Bracket		*6*
Purifying Filters		*2*
Drain Adapter (For Heat Pump Only)		*1*
Gasket (For Heat Pump Only)		*1*

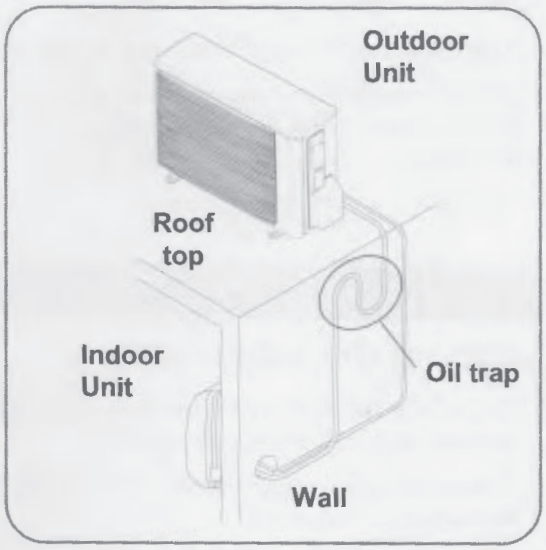
Pipe Length, Elevation and refrigerant charge

- Each outdoor unit comes with a refrigerant charge that is sufficient for use with interconnecting tubing up to 5 metres.
- The recommended maximum allowable tubing length between indoor and outdoor is 10 metres.
- The recommended maximum allowable elevation between indoor and outdoor is 5 metres.
- If the required interconnecting tube exceeds 5 metres, for each additional metre, add 21 grams of refrigerant.



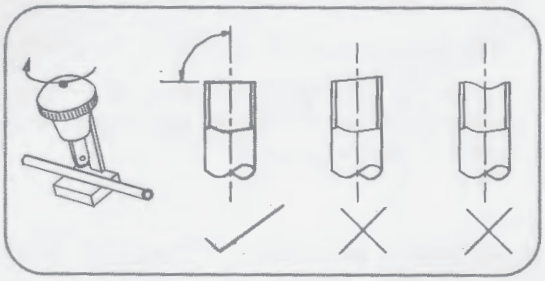
For Outdoor Unit Placed Higher Than Indoor Unit

- Oil trap should be installed every 5-7 metres.



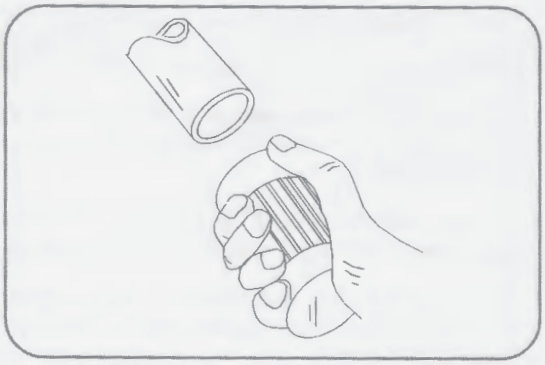
Cutting The Pipe And The Cables.

- Measure the distance between the indoor and the outdoor units.
- Cut the pipe length about 10% more than the measured distance.
- Cut the electrical cable with about 2 metres more than the measured distance.



Removing burrs

- Remove burrs from the cut edges of the pipes.
- Turn the pipe end down to avoid the metal powder entering the pipe.



CAUTION :

If burrs are not removed, they may cause a gas leakage when in operation.

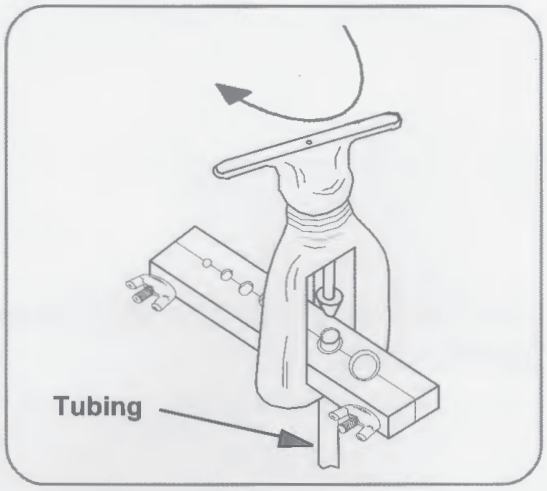
PREPARATION OF PIPING

Flaring of pipe

CAUTION :

Any bend in the tubing must have a minimum radius of 100mm to prevent leakage.
Do not bend any section of the tube repeatedly.
Do not remove the flare nut from the tubing in the indoor unit until you are ready to connect it to the outdoor unit.

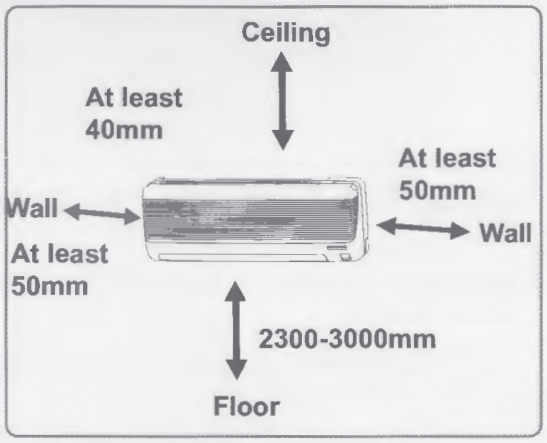
- Insert the flare nut or coupling nut over the tubing with the threaded end facing the end of the tubing.
- Clamp the tube in the flaring block, adjust the tube so that it is slightly above the block (about 1/3 of the total height of the flare).
- Place the yoke on the block with the taper cone over the end of the tube.
- Turn the handle until the flare is completed.
- Check for proper flaring of the tube. A properly flared tube should be of even thickness and evenly shine.



INDOOR UNIT INSTALLATION

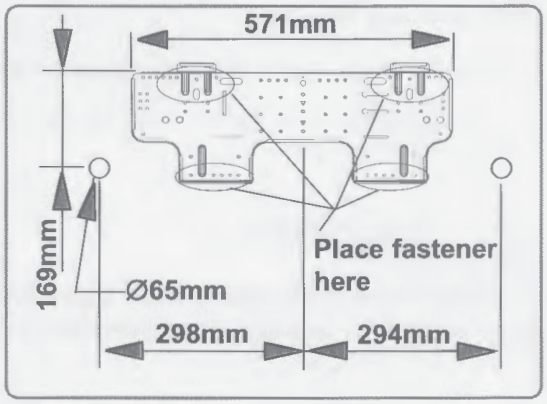
Locating the indoor unit

- Do not install the unit near any heat source, steam source or flammable gas source.
- Locate the unit in a place where it will provide cool air throughout the room.
- Make sure the minimum distances from the walls and obstructions are maintained as shown on the right.
- Ensure that the unit's airflow is not obstructed.
- Place the unit so that the air filter can be removed easily and maintenance work can be carried out without obstructions.

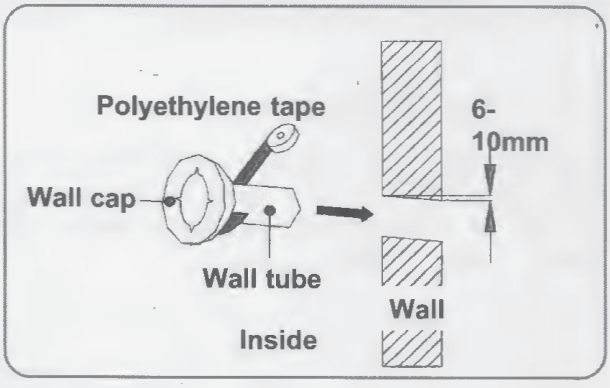


Installing the wall bracket & drilling the piping hole.

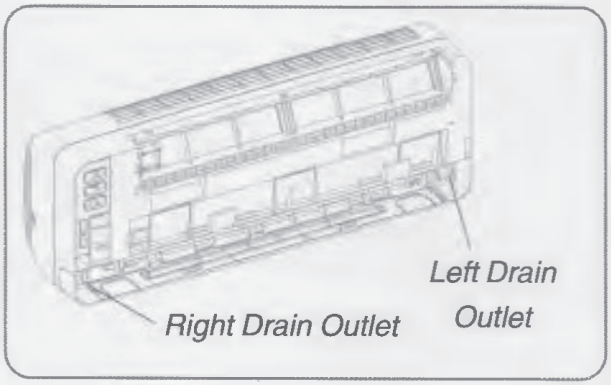
- Mount the wall bracket in a level angle.
- Secure the bracket directly on the wall.
- Fastener should be placed around the tabs as shown.
- If you are mounting the bracket on plaster board, use the tapping screws provided to secure the bracket on to the wall.
- If you are mounting the bracket on a concrete wall, use anchor bolts to secure the bracket to the wall.
- If you are using the Right or Left back outlet, see page 6, drill a 65mm diameter piping hole at either on the right or the left, and the hole should be slightly slanted to the outdoor side.



- Cut the wall tube (not provided) to fit the wall thickness.
- Connect the wall cap (not provided) to the wall tube with polyethylene tape and insert the tube in the wall.

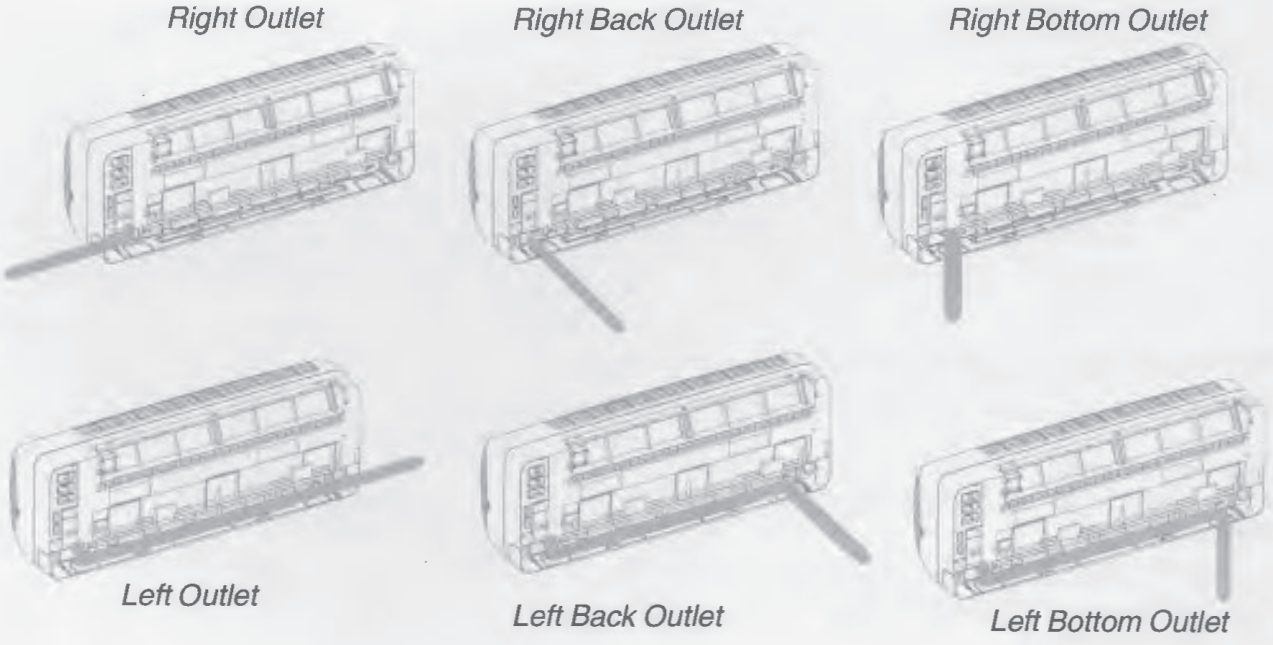


- The indoor unit is designed with two drain outlets for you to select one.



Routing the drain hose and tubing

- The following illustrate the different piping outlet option.

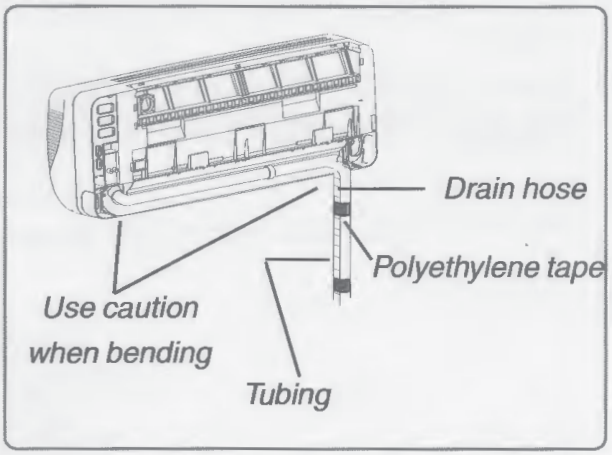


Sealing The Drain Hose And Tubing

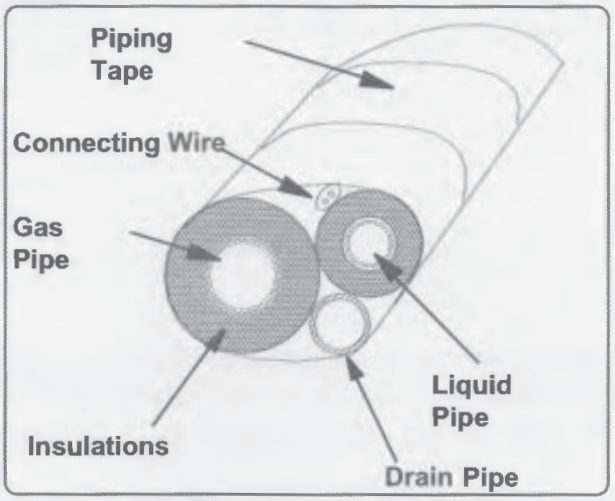
CAUTION :

Do not remove the flare nut from the tubing in the indoor unit until you are ready to connect it to the outdoor unit. Bend tubes with caution.

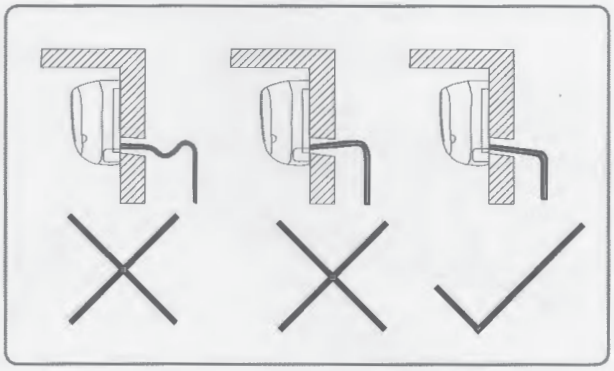
- Wrap the drain hose, tubing and electric wire together with polyethylene tape.
- Wrap all exposed tubing with tape except tubing, which will rest inside the unit.



- Insert the tubing, hose and wire through the wall tube with the drain hose in the lowest position.



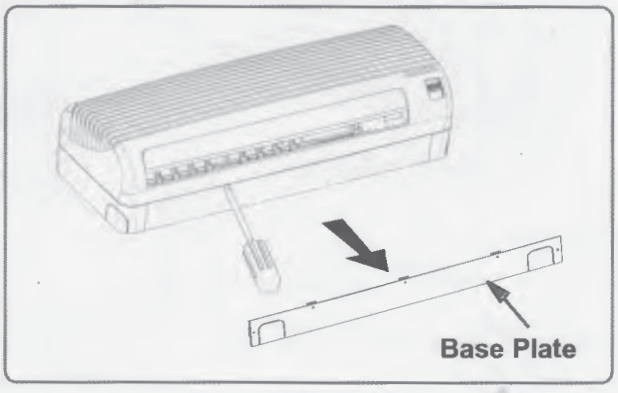
- Make sure the tubing, hose and wire angle downwards as they pass through and exit the wall tube.



Removing And Installing The Base Plate

Remove the Base Plate to facilitate connection of pipes and wires.

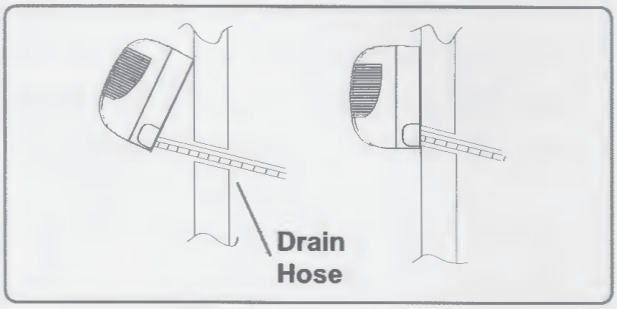
- Use a flat head screwdriver to un-latch the Base Plate from the indoor unit at various 'triangle' marked position.
- Do not twist the screwdriver to dislodge the Base Plate from the indoor unit, doing so will damage the plastic part.



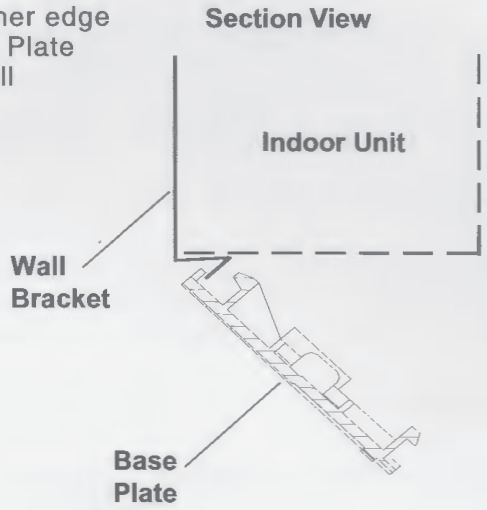
Attaching The Unit To The Wall Bracket

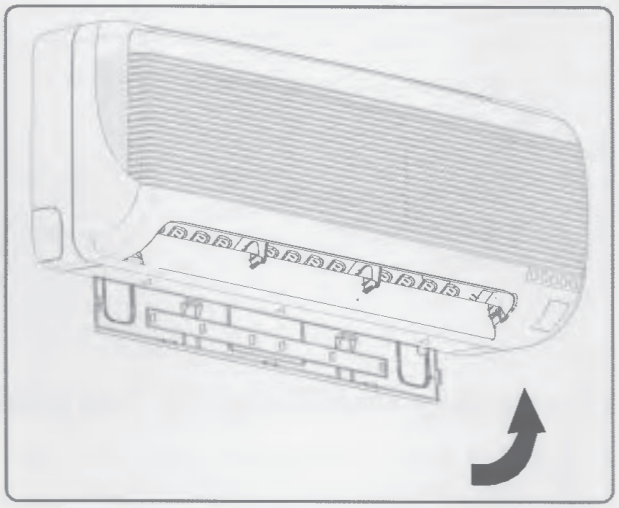
If you are using right, left or bottom piping outlet (see page 6) you must wire the unit before you attach it to the Wall Bracket.

- Hook the unit to the hangers on top of the bracket.
- Ensure that the unit is level.
- Ensure that the drain hose, tubing and electric wire are aligned and in its proper position.

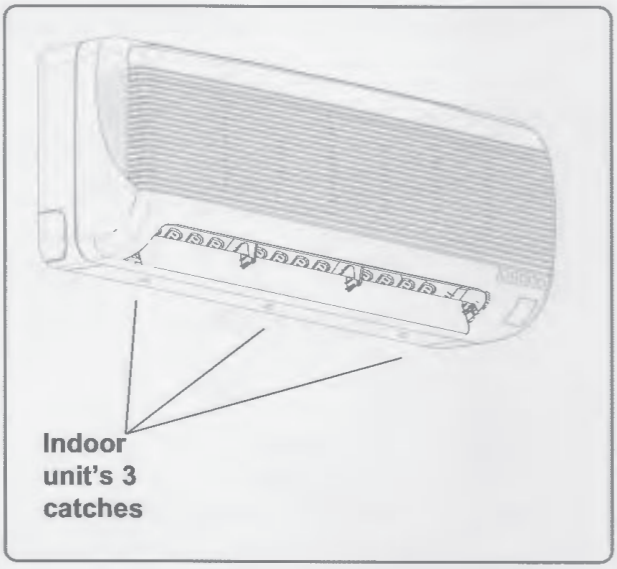


- Hook the inner edge of the Base Plate onto the wall bracket.





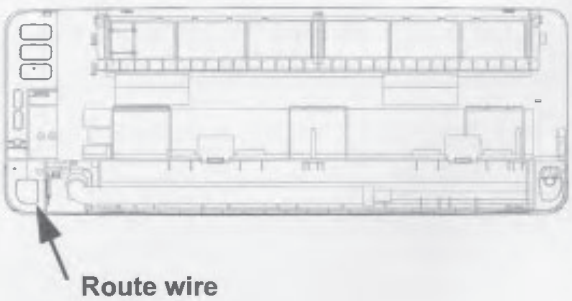
- Snap closed the other 3 catches from one end to the other.
- The 3 catches location are indicated by the embossed arrow.
- Ensure there is no bulging on the Base Plate after installation.



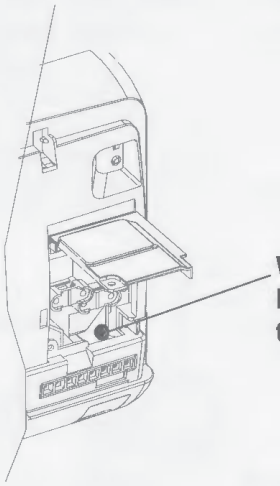
Wiring The Indoor Unit

You may connect the wires to the indoor unit by opening the Decorative Front Grille and following these steps:

- Remove a screw that secure the Control Box Cover.
- Connect the wire as shown on the wire diagram located on the unit.
- Route the interconnecting wires from the back and up through the opening in the front as shown.
- Ensure all terminals are securely tightened.



Route wire through here and up to the front



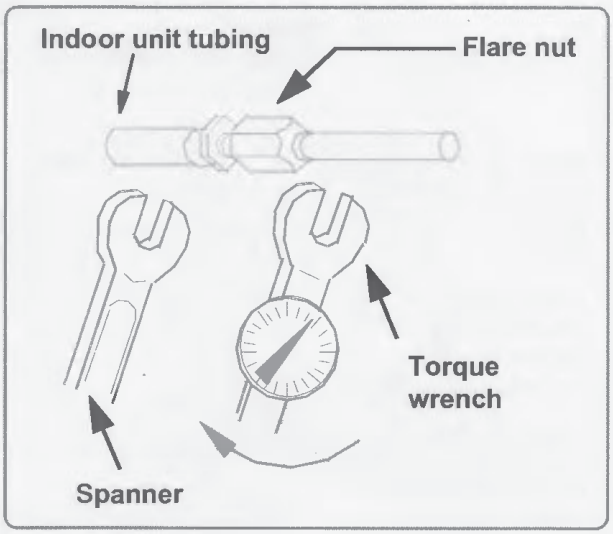
Wire from the back and up through here

Connecting The Piping To The Indoor Unit

- Align the center of the piping and then sufficiently tighten the flare nut with fingers, tighten the flare nut with torque wrench according to the table as shown below.

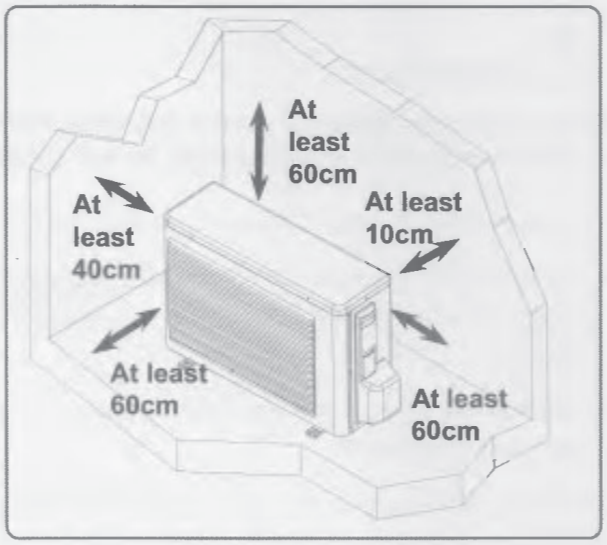
Flare nut size	Torque (N.m)
6.35mm (1/4")	12.7 - 19.3
9.52mm (3/8")	35.6 - 44.4
12.70mm (1/2")	48.9 - 61.0

Torque Table



Locating the outdoor unit

- Locate the outdoor unit where the air flow around it is not obstructed.
- Ensure that the base is level and does not exceed the maximum slope of 5 degrees.
- Secure the unit to a base with anchor bolts to reduce vibrations and noise.
- Place the unit with access space for servicing and maintenance.
- Do not install the unit near a heat source, steam source and flammable gas.
- Ensure that the minimum distances around the unit are maintained as shown on the right.
- For Heatpump unit, mount the unit above the snow line, if possible.

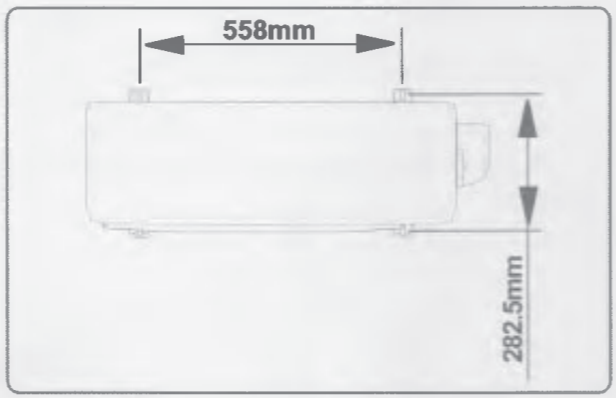


Installing The Outdoor Unit

- Use a damper mat(not supplied) when installing the outdoor unit.

* Attach the drain gasket and drain adapter to the base pan of the unit before you secure the unit (Applicable to Heatpump models only).

- Fasten the unit down, refer to the mounting dimensions as shown here.

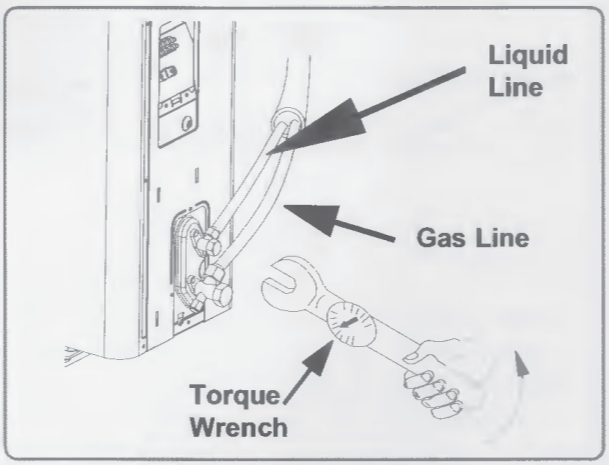


Connecting The Pipe To The Outdoor Unit

- Align the center of the piping and sufficiently tighten the flare nut with fingers.
- Finally, tighten the flare nut with torque wrench according to the Table shown here.

Flare nut size	Torque (N.m)
6.35mm (1/4")	12.7 - 19.3
9.52mm (3/8")	35.6 - 44.4
12.70mm (1/2")	48.9 - 61.0

Torque Table

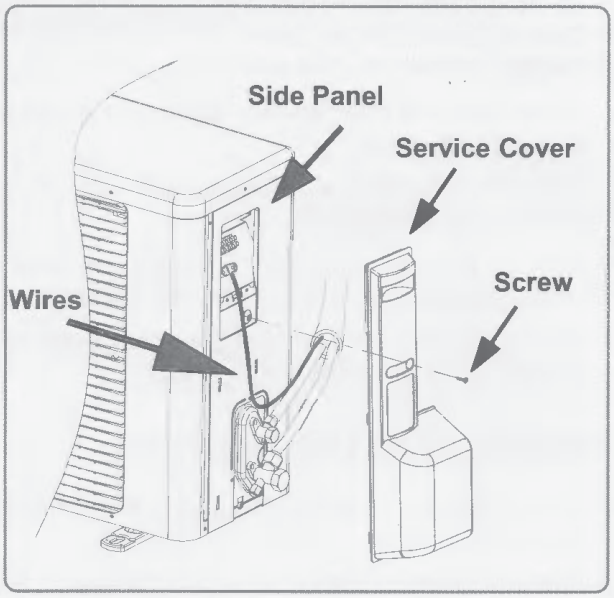


Connecting The Wires To The Outdoor Unit

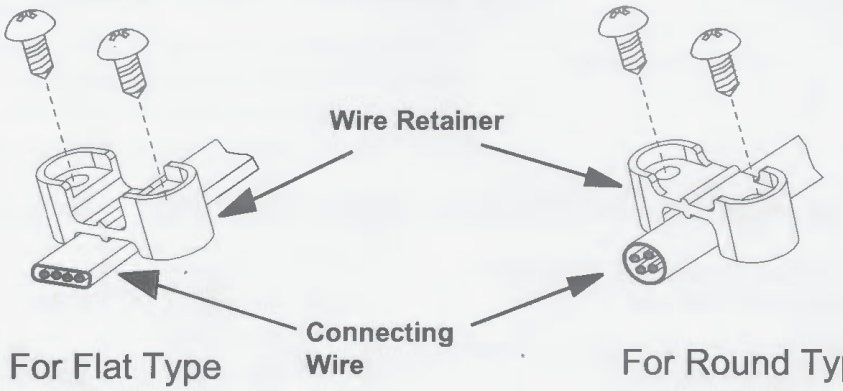
Caution

This air conditioner must be disconnected from the supply by a switch having a 3mm contact separation in all poles.

- Remove the Service Cover from the unit.
- Connect the wires to the terminals according to the wiring diagram shown on the Side Panel.
- Clamp the wire to the unit with the wire retainer provided.
- Form a drip loop in the wire to prevent water from entering the unit along the cord.
- Route the wires along the pipe.

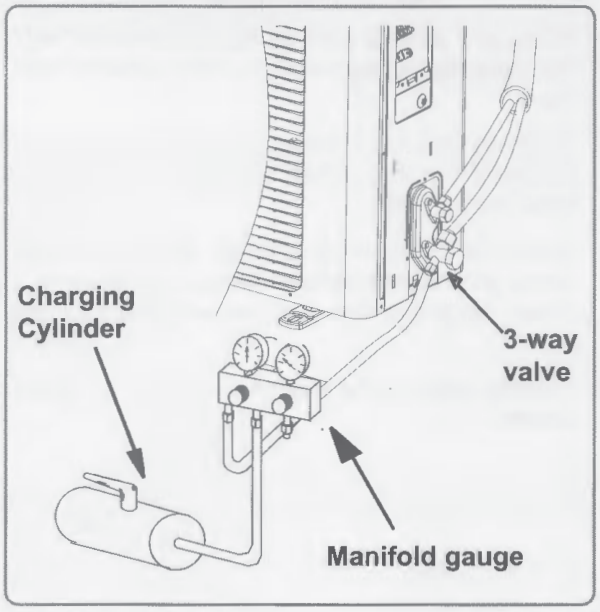


- The same Wire Retainer can be used on two types of wires by changing the orientation as shown below.



Checking for gas leakage

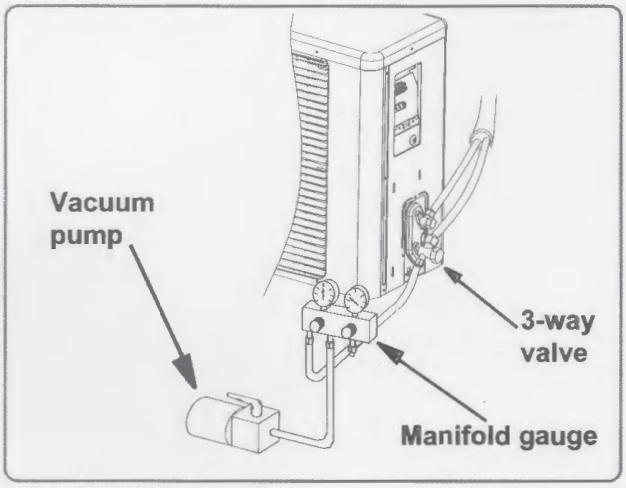
- Connect the Manifold gauge to the outdoor unit gas line port as shown on the right.
- Connect the charging cylinder to the Manifold gauge and open the valve of the Cylinder.
- Open the low pressure valve of the Manifold gauge until the meter reads steady at about 150-200 psig.
- Check for gas leakage especially around the tubing connectors with a gas-leak detector.
- If leakage was found, retighten the connector with Torque wrench and repeat the gas leakage check again.
- Upon completion of the leak test, close the valve of the charging cylinder and low side valve of the manifold gauge. Remove charging cylinder. Recover refrigerant from indoor unit and piping through the manifold gauge.



Removing air from the tubing and indoor unit

It is necessary to remove all air from the Refrigeration Cycle, as this air contains moisture, which may cause a malfunction or ineffectiveness of the compressor.

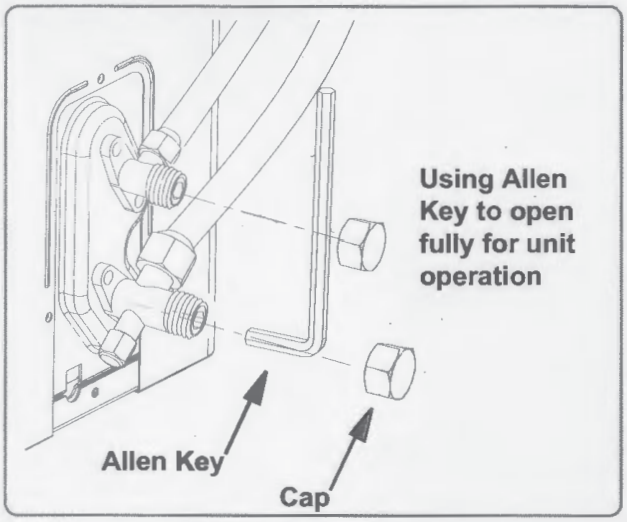
- Connect the center hose of the Manifold gauge to the vacuum pump.
- Connect the Manifold gauge to the outdoor unit gas line port as shown.
- Turn the vacuum pump on for about 10-15 minutes in order to evacuate the air.
- Close the manifold valve, then turn off the vacuum pump and disconnect the hose.



- Unscrew the cap on the 2-way and 3-way valve.
- After all lines are installed and leak tested, set both the liquid and gas line valves to fully open position with the Allen Key for the unit operation, as shown.
- Reinstall the cap and torque to the specified value under Torque Table .

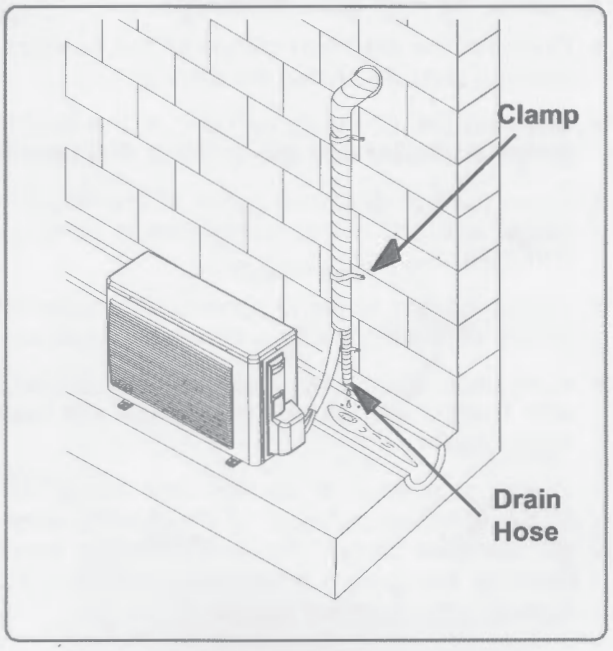
Pipe Size Diameter	Torque (N.m)
6.35mm (1/4")	12.7 - 19.3
9.52mm (3/8")	35.6 - 44.4
12.70mm (1/2")	48.9 - 61.0

Torque Table



Restraining the piping

- Wrap the tubing connection to the unit with the insulation and seal it with polyethylene tape.
- You may connect an additional drain hose. The end of the drain outlet should keep a distance from the ground.
- Tape the connecting piping, drain hose and wires with polyethylene tape from bottom upwards to the top, and secure them to the wall.
- Fill any gap in the wall that has been core drilled.



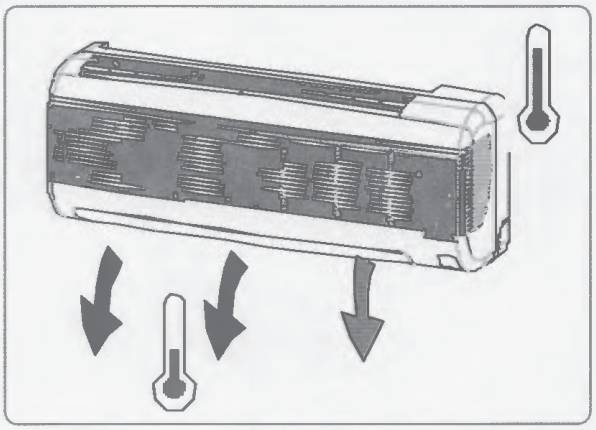
TEST RUN & CHECK

Switch On The Power Supply

CAUTION :

Ensure that all the piping and wiring are connected properly and securely, before turning the power On.

- Turn the main switch of the unit to On.
- Operate the Indoor unit at Cooling/Heating mode for fifteen minutes or more.
- Measure the temperature of the intake and the discharge air, the temperature difference should be at least 9°C.



NOTICE TO THE CONSUMER

Checking The Unit

- Check all the control functions.
- Check all the indicator lights.
- Check that the drain hose is draining properly.
- Ensure all the units are fastened properly and free from vibrations.

Upon completion of installing and checking the unit:

- Supply the consumer with the Operating Manual.
- Demonstrate the functions of the remote control.
- Demonstrate how to remove and clean the air filters.
- Explain the 3 minute delay function.

Mariani Clima S.p.a. Cap. Sociale Euro € 6.192.000 i.v.

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